

REMARKS

Claims 4, 6-8 and 10-18 are pending and stand ready for further action on the merits. Claim 4 has been amended to be a method claim and to depend from claim 8. Claim 6 has been amended to be in independent form. Claim 8 has been amended to be in independent form. Support for new claim 10 can be found in claims 1 and 6. Support for new claim 11 can be found in claim 4. Support for claims 12 and 13 can be found on page 15, second full paragraph. Support for claim 14 can be found on page 20, line 23 to page 21, line 14. Support for claims 15-18 can be found on page 22, second full paragraph. No new matter has been added by way of the above-amendment.

The following sections correspond to the sections of the outstanding Office Action.

Issues Under 35 U.S.C. §112, Second Paragraph and 35 U.S.C. §101

Claim 9 is rejected under 35 U.S.C. §112, second paragraph and under 35 U.S.C. §101.

Applicants respectfully traverse both of the rejections.

In view of the cancellation of claim 9, Applicants respectfully submit that these rejections are rendered moot. As such, withdrawal of the rejections is respectfully requested.

Issues Under 35 U.S.C. §103

Claims 1, 4 and 6-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Eibner et al. (GB 2116960). Applicants respectfully traverse the rejection.

Advantages of the Present Invention -

The present invention is drawn to a plant-activating agent, a composition comprising the plant-activating agent and a method of using the agent or composition for activating plants by applying the agent or composition to a plant. The advantage of the inventive agent is that it works to promote the growth of the plant by itself and not solely to increase the efficiency at which other components of the composition are absorbed in the plant. As such, the inventive plant-activating agent/composition: a) promotes the green-degree of the leaves of the plant; b) heightens the efficiency for absorbing the fertilizer; c) increases the leaf-area; and d) increases the root power while not causing chemical injury to the plant.

With regard to the inventive plant-activating composition, there are at least two embodiments of this aspect of the invention, which are as follows:

A) A plant-activating composition comprising a plant-activating agent and at least one of a surfactant and a chelating agent, said plant-activating agent is a compound of formula (II),



wherein R represents an alkyl or alkenyl group having 11 to 29 carbon atoms; X^1 represents a hydrogen atom, an alkyl or acyl group having 1 to 30 carbon atoms, an alkenyl group having 2 to 30 carbon atoms, or a counter ion; AO represents at least one group selected from oxyethylene, oxypropylene and oxybutylene groups and may be random or block; and n represents an average number of moles added and is zero to 30; and

B) A plant-activating composition comprising a plant-activating agent and a fertilizer agent, said plant-activating agent is a compound of formula (II),



wherein R represents an alkyl or alkenyl group having 11 to 29 carbon atoms; X^1 represents a hydrogen atom, an alkyl or acyl group having 1 to 30 carbon atoms, an alkenyl group having 2 to 30 carbon atoms, or a counter ion; AO represents at least one group selected from oxyethylene, oxypropylene and oxybutylene groups and may be random or block; and n represents an average number of moles added and is zero to 30; wherein when n is zero and X^1 is a counter ion, then R has an even number of carbon atoms.

Thus, when the plant-activating composition comprises the plant-activating agent and the fertilizer agent, the plant-

activating agent does not include the salt of a naturally occurring fatty acid, since naturally occurring fatty acid salts typically have a value of R which contains an odd number of carbon atoms.

The above-comments have been provided for the Examiner's benefit to help the Examiner appreciate the patentable distinctions between the presently claimed invention and the teachings of Eibner et al.

Eibner et al. -

Eibner et al. teach a plant promoting preparation having a controlled release rate of the nutrients wherein the plant promoting preparation has a plant promoting agent which is in a fertilizer which can possibly be enveloped with an enveloping agent. The enveloping agent is

at least one water-repellent substance selected from paraffins, waxes, metal soaps, quaternary ammonium compounds, urea derivatives, fatty acid-modified resins, silicones and perfluorinated organic compounds, the water-repellent substance is iron palmitate, the enveloping agent is a substance that is sparingly soluble in water or capable of swelling in water, the substance being a polymer containing water-wettable groups, the water-wettable groups are hydroxyl, carboxyl, alkyl ester, cyano, chloro or fluoro groups, such polymers that are sparingly soluble in water or capable of swelling in water are polyvinyl alcohols, preferably containing a residual acetyl content of 10%, the enveloping agent is a substance that is sparingly soluble in water, the substance being an inorganic compound, such an inorganic compound that is sparingly soluble in water is iron phosphate or calcium phosphate, the enveloping agent is

(i) a substance that is sparingly soluble in water or capable of swelling in water, the substance being a polymer containing water-wettable groups or an inorganic compound, and (ii) at least one water-repellent substance selected from paraffins, waxes, metal soaps, quaternary ammonium compounds, urea derivatives, fatty acid-modified resins, silicones and perfluorinated organic compounds, the enveloping agent is a water-repellent substance. See page 1, lines 40-53 of Eibner et al.

As examples of metal soaps, Eibner et al. teach Mg-, Ca-, Fe-, Cu-, Zn-, Mn-, Zr- or Al-salts of lauric acid, myristic acid, palmitic acid, stearic acid or oleic acid, preferably Mg-, Ca-, Fe-, Al- or Zr-salts of palmitic acid, see page 3, lines 15-17.

Thus, these metal soaps, which are a combination of a naturally occurring fatty acid and an inorganic salt, are used in combination with a fertilizer.

Applicants respectfully submit that the claims, as presently amended, do not include the combination of a fatty acid salt and a fertilizer. Claim 6 does not recite the fertilizer agent and claim 10 includes a proviso which reads that wherein when n is zero and X^1 is a counter ion, then R has an even number of carbon atoms.

However, should the Examiner interpret either claim 6 or 10 to encompass the fertilizer/fatty acid salt combination, Applicants respectfully submit that Eibner et al. fail to fairly suggest the combination of the metal soaps with the fertilizer.

First, Eibner et al. gives a shotgun disclosure (which by any account would be difficult to understand) wherein the possible

combination of the metal soaps and the fertilizer is one out of a plethora of possibilities. Such a finding that the fertilizer/fatty acid salt combination would be obvious can only be made by improper hindsight reconstruction.

A proper analysis begins with the text of section 103, which includes the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight," see Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 873, 228 USPQ 90, 98 (Fed. Cir. 1985), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field, see, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983). The case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to make the modifications to a reference's teachings necessary to obtain the present invention, see for e.g., In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

Applicants note that none of the exemplified embodiments of Eibner et al. include the metal soap as an enveloping agent. This would be considered a teaching away from the use of metal soaps by the skilled artisan. A reference which leads one of ordinary skill in the art away from the claimed invention cannot render it unpatentably obvious. Dow Chem. Co. v. American Cyanamid Co. 816 F2d 617, (CAFC 1987). In determining the scope and content of the prior art, and determining whether the prior art suggested the claimed invention, the references "must be read as a whole and consideration must be given where the references diverge and teach away from the claimed invention." Akzo N.V. v. United States Int'l Trade Comm'n , 1 USPQ2d 1241, 1246 (Fed. Cir. 1986).

In view of the foregoing, Applicants respectfully submit that the presently claimed invention is not made obvious by Eibner et al. and withdrawal of the rejections is respectfully requested.

Information Disclosure Statement (IDS)

On June 22, 2001, Applicants timely filed an IDS with the U.S. Patent and Trademark Office. However, a signed copy of the PTO-1449 Form was not enclosed with the outstanding Office Action. During a telephone interview with the Examiner on February 15, 2002, the Examiner indicated that a copy of the PTO-1449 Form was not in the official file, but the references were. The Examiner requested that Applicants include a second copy of the PTO-1449

Form in responding to the outstanding Office Action. Accordingly, Applicants have attached hereto a second copy of the PTO-1449 Form. The Examiner is requested to initial and sign the attached PTO-1449 Form and enclose the signed copy with the next communication.

Conclusion

In view of the above amendments and comments, Applicants respectfully submit that the claims are in condition for allowance. A notice to such effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Dr. Garth M. Dahlen (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees


required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made
Copy of PTO-1449 Form filed June 22, 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please replace the 1st full paragraph on page 1, lines 4-12, with the following rewritten text:

--The present invention relates to a plant-activating agent, a plant-activating composition or a method of activating a plant by applying [thereof] said composition or agent in the state of a solution or a solid to roots, stems, phylloplanes or fruits of a plant, such as spraying onto phylloplanes or irrigating into soil. Now, hereinafter, the term of "plant" means products that can be recognized from the term itself, vegetables, fruits, fruit trees, crops, bulbs, flowers, grass, herbs, plants defined in taxonomy, and so on.--

Please replace the paragraph bridging page 1 (lines 13-25) and page 2 (line 1) with the following rewritten text:

--It is added by the inventors of the invention that the term "plant growth" includes increasing the amount of growth, increasing the weight of a plant on both sides of the aboveground and the underground. [Further] "Plant growth" also includes further increasing greenness of leaves in terms of SPAD, increasing the height of grasses, improving harvest or crop, increasing

photosynthesis, accelerating growth of green cells, improving absorption of a fertilizer, increasing sugar content and ascorbic acid of leaves and fruit. [More in details] In more detail, it extends to improving: gloss of leaves, rising-up of leaves, firmness of leaves, an increased thickness of leaves, firmness of stem, short joints of stem, thickness of stem, whiteness of root, the number of fine roots, vivacity or strength of grasses or trees, gloss of fruit, size of fruit, fruiting, color of fruit etc.--

Please replace the 1st full paragraph on page 2, lines 3-19, with the following rewritten text:

--Various nutrient elements are necessary for growth of plants. It is known that a lack of some of the elements causes [the] hindrance [of] in the growth of [the] plants. For example, the big three fertilizer components function as follows. Nitrogen is a component element of proteins, and phosphorus is a formation element of nucleic acid or phospholipid and further plays an important part in energy metabolism and synthetic or decomposing reaction of a substance. Potassium has a physiological action of substance metabolism or substance migration. If these main components are [lack] lacking, the growth of plants generally becomes poor. Calcium is an important component constituting plants and cells, and further plays an important part in maintenance of the balance of the metabolic system. The lacking state of calcium causes physiological

troubles. Besides, various nutrients as follows are necessary for plants: magnesium, iron, sulfur, boron, manganese, copper, zinc, molybdenum, chlorine, silicon, sodium and the like.--

Please replace the 1st full paragraph on page 3, lines 5-16, with the following rewritten text:

--However, it is an important theme in agricultural production to promote the growth of agricultural plants and increase the yield per unit area to strive for an increase in income. Various plant growth regulators [being necessary for this] have been developed and used to help meet this need. The plant growth regulators, the typical examples of which include gibberellin and auxin, are used to regulate growth reactions_ or form-producing reactions_ such as germination, rooting, expansion, flowering and bearing. When these regulators are used, a period or a concentration thereof for applying these regulators and a method of treating these regulators are complicated. Thus, the uses thereof are restrictive.--

Please replace the 2nd paragraph on page 18, lines 7-11, with the following rewritten text:

--Examples of phosphoric acid ester [group-containig] group-containing surfactants include alkyl phosphoric acid ester salts, alkylphenylphosphoric acid ester salts, polyoxyalkylene alkylphosphoric acid ester salts and polyoxyalkylene [alkylpheneylphosphoric] alkylphenylphosphoric acid ester salts.--

IN THE CLAIMS:

Claims 1-3, 5 and 9 were canceled.

The claims were amended as follows:

4. (Amended) The [plant-activating agent] method as claimed in [the] claim [1] 8, which is the compound (2) represented by the formula (II) wherein n is zero to 20; R represents an alkyl or alkenyl group having 13 to 21 carbon atoms, X represents a hydrogen atom, an alkyl or acyl group having 1 to 22 carbon atoms, an alkenyl group having 2 to 22 carbon atoms, or a counter ion (when n is not zero, the counter ion is excluded).

6. (Amended) A plant-activating composition comprising a plant-activating agent [as claimed in the claim 1] and at least one of [a fertilizer agent,] a surfactant and a chelating agent, said plant-activating agent is a compound of formula (II),



wherein R represents an alkyl or alkenyl group having 11 to 29 carbon atoms; X¹ represents a hydrogen atom, an alkyl or acyl group having 1 to 30 carbon atoms, an alkenyl group having 2 to 30 carbon atoms, or a counter ion; AO represents at least one group selected from oxyethylene, oxypropylene and oxybutylene groups and may be random or block; and n represents an average number of moles added and is zero to 30.

7. (Amended) The composition as claimed in [the] claim 6, wherein the surfactant is selected from a nonionic surfactant, an anionic surfactant and an amphoteric surfactant.

8. (Amended) A method of activating a plant by applying a plant-activating agent [as defined in the claim 1] to the plant, said plant-activating agent is capable of promoting growth of the plant by itself and is a compound of formula (II),



wherein R represents an alkyl or alkenyl group having 11 to 29 carbon atoms; X¹ represents a hydrogen atom, an alkyl or acyl group having 1 to 30 carbon atoms, an alkenyl group having 2 to 30 carbon atoms, or a counter ion; AO represents at least one group selected

from oxyethylene, oxypropylene and oxybutylene groups and may be random or block; and n represents an average number of moles added and is zero to 30.

Claims 10-18 have been added.